

## **REMARKS**

Reconsideration of the application is respectfully requested.

### **I. Status of the Claims**

Claim 4 is cancelled without prejudice or disclaimer of the subject matter therein.

Claim 1-3, and 7 are amended. No new matter is added.

Claims 1-3 and 5-7 are pending.

### **II. Rejections under 35 U.S.C. § 102**

Claims 1-3, 5, and 6 are rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,409,532 to Hollenbeck et al. (herein "Hollenbeck"). Applicant respectfully traverses these rejections.

Applicant's invention relates to providing a high torque starting system for a single phase induction motor. The stator of the induction motor supports two coils, a starting coil and a running coil. To obtain the high torque, an electronic circuit control unit having two switches is provided where each switch is connected in series with one of the two coils in the motor. The first switch, when closed, connects the starting coil to a power source and the second switch, when closed, connects the running coil to the power source. The control unit is programmed to selectively control the flow of current through the starting coil and the running coil by selectively opening and closing the first and second switches. More specifically, during startup of the motor, the control unit sequentially opens and closes the running switch to intermittently feed current to the running coil, while simultaneously keeping the starting switch closed to continuously feed current to the starting coil. In some embodiments, the running switch is a triac that automatically opens when the current flowing through it reaches zero. In these embodiments, the control unit need not continuously open the running switch. Independent claim 1 is amended to positively recite these features.

In contrast to the amended claims of the present application, Hollenbeck discloses only a system for controlling the direction of rotation of a reversible split phase induction motor at start up.

Hollenbeck discloses a system having an electronic control that, during each half cycle, triggers a thyristor into conduction to feed current to the starting coil at either a first firing angle to initiate motor rotation in a first direction or at a second firing angle to initiate motor rotation in a second direction (Hollenbeck, column 4, lines 24-41). A second thyristor is triggered into conduction to feed current to the running coil at a fixed firing angle (Hollenbeck, columns 5, line 53 – column 6, line 21). Hollenbeck neither discloses nor suggests intermittently feeding current to the running coil while continuously feeding current to the starting coil during start up while the motor is accelerating as recited in amended claim 1.

Further, Hollenbeck discloses a circuit to provide the start-up of a motor, whereby the start-up occurs in a specific rotation direction, selected from two opposite rotation directions. According to figure 5 and the flow chart of figure 6 of Hollenbeck, the circuit includes two triacs. The first triac 30 is in series with the starting coil, and the second triac 32 is in series with the running coil. In contrast to the invention claimed in the present application, Hollenbeck discloses that the first triac 30, which is in series with the starting coil, has its triggering angle changed to determine the rotation direction, while the second triac, which is connected to the running coil, has a constant triggering angle (Hollenbeck, columns 5, line 53 – column 6, line 21). Thus, Hollenbeck discloses a system for starting a motor in a selected direction by intermittently feeding current to both the starting coil and the running coil. Significantly, Hollenbeck does not disclose or suggest a system where the starting coil is constantly energized during start up.

In contrast, the present application is directed to a system in which only the triggering angle of the triac in series with the running coil is modified. During start up, the starting coil is constantly energized. Unlike the system disclosed by Hollenbeck, this configuration does not provide for selectively controlling the rotation direction, but instead provides a substantial increase in the motor torque upon start up compared with prior art solutions. Hollenbeck does not disclose or suggest that motor torque upon startup can be substantially increased by intermittently feeding current to the running coil while continuously feeding current to the starting coil during start up. Instead,

Hollenbeck merely discloses that the start up direction can be influenced by controlling the firing angles of triacs used to intermittently feed current to both the startup coil and the running coil.

In light of the foregoing, the cited reference fails to disclose, teach, or suggest the features of the claimed invention in view of the intermittent feeding of current to the running coil while continuously feeding current to the starting coil during start up. Applicant further submits that claims 2, 3, 5, and 6, which are dependent upon claim 1, are allowable at least by reason of dependency upon an allowable base claim. Consequently, Applicant submits that the present invention is both novel and inventive over the cited reference and respectfully request that the rejections be withdrawn.

### **III. Rejections under 35 U.S.C. § 103**

Claim 7 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Hollenbeck.

Applicant respectfully traverses this rejection. Claim 7 depends on base claim 1, and should be allowable at least by reason of dependency upon an allowable base claim for the reasons presented above. Accordingly, reconsideration and withdrawal of the rejection of claim 7 is respectfully requested.

**CONCLUSION**

In view of the remarks and arguments above, Applicant believes the pending application is in condition for allowance and it is respectfully requested that the application be reconsidered and that all pending claims be allowed and the case passed to issue.

If there are any other issues remaining that the Examiner believes could be resolved through a Supplemental Response or an Examiner's Amendment, the Examiner is respectfully requested to contact the undersigned at the telephone number indicated below.

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Respectfully submitted,

By 

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